

SPOP (h3): 293 Lysate: sc-129835

BACKGROUND

SPOP (speckle-type POZ protein), also known as TEF2, HIB homolog 1 or Roadkill homolog 1, is a member of the Tdpoz family containing one N-terminal MATH (Meprin and TRAF Homology) domain and one C-terminal BTB/POZ domain. SPOP can exist as a homodimer and is expressed in a variety of tissues localizing to the nucleus. Through an interaction with CUL-3, SPOP is involved in ubiquitinylation and protein degradation. SPOP specifically interacts with CUL-3 via its BTB/POZ domain and recruits substrates to the CUL-3-based ubiquitin ligase via its MATH domain. Substrates recruited by SPOP and targeted for ubiquitylation via the CUL-3/SPOP complex include PDX-1, Bmi-1, MacroH2A, PIPK II β and Daxx. These substrates are subsequently degraded by the proteasome. In addition, SPOP itself becomes ubiquitylated by the CUL-3-based ubiquitin ligase and is targeted for proteasomal degradation. SPOPL (speckle-type POZ protein-like), also known as HIB homolog 2 or Roadkill homolog 2, is a 392 amino acid nuclear protein that may be involved in ubiquitination and proteasomal degradation processes. SPOP and SPOPL share significant amino acid sequence homology.

REFERENCES

1. Nagai, Y., et al. 1997. Identification of a novel nuclear speckle-type protein, SPOP. FEBS Lett. 418: 23-26.
2. Zapata, J.M., et al. 2001. A diverse family of proteins containing tumor necrosis factor receptor-associated factor domains. J. Biol. Chem. 276: 24242-24252.
3. Takahashi, I., et al. 2002. MacroH2A1.2 binds the nuclear protein SPOP. Biochim. Biophys. Acta 1591: 63-68.
4. La, M., et al. 2004. Daxx-mediated transcriptional repression of MMP1 gene is reversed by SPOP. Biochem. Biophys. Res. Commun. 320: 760-765.
5. Liu, A., et al. 2004. Identification of PCIF1, a POZ domain protein that inhibits PDX-1 (MODY4) transcriptional activity. Mol. Cell. Biol. 24: 4372-4383.
6. Hernández-Muñoz, I., et al. 2005. Stable X chromosome inactivation involves the PRC1 Polycomb complex and requires histone MACROH2A1 and the CULLIN3/SPOP ubiquitin E3 ligase. Proc. Natl. Acad. Sci. USA 102: 7635-7640.
7. Zhang, Q., et al. 2006. A hedgehog-induced BTB protein modulates hedgehog signaling by degrading Ci/Gli transcription factor. Dev. Cell 10: 719-729.
8. Kwon, J.E., et al. 2006. BTB domain-containing speckle-type POZ protein (SPOP) serves as an adaptor of Daxx for ubiquitination by Cul3-based ubiquitin ligase. J. Biol. Chem. 281: 12664-12672.

CHROMOSOMAL LOCATION

Genetic locus: SPOP (human) mapping to 17q21.33.

PRODUCT

SPOP (h3): 293 Lysate represents a lysate of human SPOP transfected 293 cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

SPOP (h3): 293 Lysate is suitable as a Western Blotting positive control for human reactive SPOP antibodies. Recommended use: 10-20 μ l per lane.

Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-transfected 293 cells.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.